

Remarks

In the present response, one claim (1) is amended, and six claims (36-41) are added. Claims 1-10, 18-21, and 36-41 are presented for examination. Applicants believe that no new matter is entered.

I. Election/Restriction

Applicants acknowledge that claims 11-17 and 22-25 are withdrawn as being drawn to a non-elected invention. Applicants reserve the right to pursue these withdrawn claims in continuing applications.

II. Formal Drawings.

Applicants submit herewith formal drawings. Applicants believe that no new matter is entered.

III. Inconsistency in Disposition of Claim 19

In the Office Action Summary at 7) on page 1, an indication is made that claim 19 is objected to. However, the Office Action provides a rejection of claim 19 on page 7. Applicants kindly request clarification on the allowability of claim 19.

IV. Claim Rejections: 35 USC § 103

Claims 1-5, 8, 9, 18, 20, and 21 are rejected under 35 USC § 103(a) as being unpatentable over USPN 6,751,343 (hereafter Ferrell) in view of USPN 6,754,667 (hereafter Kim). Applicants traverse.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art cited must teach or suggest all the claim limitations. *See M.P.E.P. § 2143.* Applicants assert that the rejection does not satisfy these criteria.

Claim 1

Claim 1 recites numerous limitations that are not taught or suggested in Ferrell in view of Kim. By way of example, claim 1 recites “each of the match descriptors corresponding to a multidimensional space having more than two dimensions.” Ferrel in view of Kim does not teach or suggest this limitation.

In the Office Action at page 5, the Examiner admits the following: “Ferrell does not explicitly teach computing a match descriptor corresponding to a multidimensional space” Applicants agree. The Office Action, however, attempts to cure this deficiency with Kim. Applicants respectfully disagree.

The Office Action cites Kim (Col. 3, lines 53-57) for teaching a match descriptor corresponding to multidimensional space. For convenience, this section of Kim is reproduced:

The image descriptor 103 stores a plurality of image descriptors of the images extracted in the image descriptor extracting unit 101, which are respectively linked to corresponding to the image. In other words, the image descriptor is linked to the image. (Col. 3, lines 53-57).

Kim teaches an image descriptor that stores a plurality of image descriptors of the extracted images. This teaching, however, should be compared with the claimed recitations. Claim 1 recites “each of the match descriptors corresponding to a **multidimensional space having more than two dimensions.**” No where does Kim teach or suggest image descriptors corresponding to a multidimensional space having more than two dimensions. Kim merely teaches storing plural image descriptors of extracted images.

For at least this reason, claim 1 is allowable over Ferrell in view of Kim. Claims 2-10 depend from claim 1 and inherit the limitations of the base claim. Thus, for at least the reasons given in connection with claim 1, claims 2-10 are allowable over Kim, Ferrel, and/or other references noted in the Office Action.

Claim 18

Claim 18 recites numerous limitations that are not taught or suggested in Ferrell in view of Kim. By way of example, claim 18 recites “computing a match descriptor corresponding to a **multidimensional space indicative of each of the match images.**” Ferrel in view of Kim does not teach or suggest this limitation.

In the Office Action at page 5, the Examiner admits the following: “Ferrell does not explicitly teach computing a match descriptor corresponding to a multidimensional space” Applicants agree. The Office Action, however, attempts to cure this deficiency with Kim. Applicants respectfully disagree for reasons provided in connection with claim 1.

As another example, claim 18 recites “organizing each of the match descriptors in a database according to a similarity metric ... operable to indicate match descriptors that are near to other match descriptors **in the multidimensional space.**” As noted, Kim teaches an image descriptor that stores a plurality of image descriptors of the extracted images. Kim, though, does not teach image descriptors in multidimensional space.

The Office Action cites Kim (Col. 6, lines 8-20) for teaching “organizing each of the match descriptors in a database according to a similarity metric ... operable to indicate match descriptors that are near to other match descriptors in the multidimensional space.” For convenience, this section of Kim is reproduced:

Then, an image descriptor of the query image are extracted and transmitted to the image descriptor comparing unit 106 in the query image descriptor extracting unit 105 at step S204. The image descriptor of the query image is compared with the image descriptors stored on the database, at step S206, thereby calculating similarities between the query image and the images stored on the database. Images corresponding to the image descriptors, which are determined as similar to the image descriptor of the query image, are obtained from the image database 102, arranged in order of the similarity and transmitted to the image output unit 107 at step S208. The retrieved image(s), at least an image similar to the query image, is outputted through the image output unit 107 at step S210. (Col. 6, lines 8-20).

Applicants have scrutinized this section of Kim but cannot find a teaching or suggestion for organizing each of the match descriptors in a database according to a similarity metric ... operable to indicate match descriptors that are near to other match descriptors **in the multidimensional space.**

For at least these reasons, claim 18 is allowable over Ferrell in view of Kim. Claims 19-21 depend from claim 18 and inherit the limitations of the base claim. Thus, for at least the reasons given in connection with claim 18, claims 19-21 are allowable over Kim, Ferrel, and/or other references noted in the Office Action.

V. Claim Rejections: 35 USC § 103 (Claims 6 and 7)

Claims 6 and 7 are rejected under 35 USC § 103(a) as being unpatentable over Ferrell in view of Kim in further in view of Bracewell.

Bracewell fails to cure the deficiencies of Ferrell and/or Kim. For at least the reasons given in connection with claim 1 in Section IV, claims 6 and 7 are allowable over Ferrell in view of Kim in further in view of Bracewell.

VI. Claim Rejections: 35 USC § 103 (Claim 10)

Claim 10 is rejected under 35 USC § 103(a) as being unpatentable over Ferrell in view of Kim in further in view of Gionis.

Gionis fails to cure the deficiencies of Ferrell and/or Kim. For at least the reasons given in connection with claim 1 in Section IV, claim 10 is allowable over Ferrell in view of Kim in further in view of Gionis.

VII. New Claims

Applicants submit new claims 36-41. These claims have numerous limitations that are not taught or suggested in the art of record. Applicants provide a few examples of such limitations.

Claims 36 and 40 recite match descriptors that define images in terms of **exclusion of attributes.** The art of record does not teach or suggest this limitation.

Claims 37 and 41 recite a distance metric that is a set intersection metric having "a ratio of a number of elements common to two sets and a total number of unique elements in the two sets." The art of record does not teach or suggest this limitation.

Claim 38 recites a specific equation for the intersection metric. The art of record does not teach or suggest this limitation.

Claim 39 recites that the multidimensional space has more than two dimensions. Applicants have argued herein that the art of record does not teach or suggest this limitation.

CONCLUSION

In view of the above, Applicants believe claims 1-10, 18-21, and 36-41 are in condition for allowance. Allowance of these claims is respectfully requested.

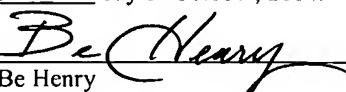
Any inquiry regarding this Amendment and Response should be directed to Philip S. Lyren at Telephone No. (281) 514-8236, Facsimile No. (281) 514-8332. In addition, all correspondence should continue to be directed to the following address:

Hewlett-Packard Company
Intellectual Property Administration
P.O. Box 272400
Fort Collins, Colorado 80527-2400

Respectfully submitted,


Philip S. Lyren
Reg. No. 40,709
Ph: 281-514-8236

CERTIFICATE UNDER 37 C.F.R. 1.8: The undersigned hereby certifies that this paper or papers, as described herein, are being deposited in the United States Postal Service, as first class mail, in an envelope address to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 21st day of October, 2004.

By 
Name: Be Henry